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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,641	01/27/2004	Will Allen	200313916-1	6594

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EXAMINER

TRAN, HENRY N

ART UNIT

PAPER NUMBER

2629

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/766,641

Applicant(s)

ALLEN ET AL.

Examiner

Henry N. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Application has been examined. The original claims 1-26 are pending. The examination results are as follows.

Information Disclosure Statement

2. The examiner has considered the documents listed in form PTO-1449 submitted with the Information Disclosure Statement (IDS) received 1/27/04 (see the attached form PTO-1449).

Specification

3. The cross-reference to certain related applications recited in the first sentence of the specification have been now patented. Update the status information for such applications is required in response to this Office action.

Claim Objections

4. Claim 23 is objected to because of the following informalities: The claim is directed to an apparatus not a method. The term "the method" recited in the first line should be deleted. Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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6. Claims 1, 3-4, 6-15, 17-23, 25 and 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Katoh et al. (U.S. Publication No. US 2003/0090597, hereinafter referred to as referred to as “Katoh”).

Regarding claim 13, Katoh teaches a system for displaying an image, the system comprising: an image processing unit (100) adapted to receive image data for the image and to define from the image data a first sub-frame of the image, e.g., R frame, having a plurality of image elements and at least a second sub-frame of the image, e.g., G frame, having a corresponding plurality of image elements, each image element of the second sub-frame being spatially offset an offset distance from a corresponding image element of the first sub-frame;; and a display device (104 and 110) adapted to display the first sub-frame in a first position and the second sub-frame in a second position with each displayed image element of the second sub-frame spatially offset substantially the offset distance from the corresponding displayed image element of the first sub-frame; see Figures 6 and 37, paragraphs 322, 326, 334 to 338.

Regarding claims 14, 15 and 17-22, Katoh further teaches that: the image processing unit (100) comprising a scaler (126) that is adapted to sub-sample or to interpolate the image data and to perform one of increase and decrease the resolution of the image data; see paragraph 325; the second sub-frame is spatially offset at least one of a vertical distance and a horizontal distance from the first sub-frame, and where the display device is adapted to display the second sub-frame from display of the first sub-frame by the at least one of the vertical distance and the horizontal distance; see Figures 6 and 39; the display device includes a plurality of modulating elements forming a plurality of image regions, e.g., regions of R, G, and B, and a light generator (102) configured to direct a light onto each of the plurality of image regions, the display device being

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adapted to modulate a first image region with the first sub-frame and a second image region with the second sub-frame, where the plurality of modulating elements includes a single array of modulating elements forming the first and second image regions, where the light includes at least one of a red light band, a green light band, and a blue light band, where the light generator is configured to direct light of the same color on the first and second image regions, or where the light generator is configured to direct light of different colors on the first and second image regions, see Figures 6, 7, 8, and 37.

Regarding claims 1, 3, 4 and 6-12, which are method claims corresponding to the apparatus claims 13-15 and 17-22, are therefore rejected on the same basis set forth in claims 13-15 and 17-22.

Regarding claims 23 and 25, which comprise the claimed elements and limitations of claims 13 and 18, rephrased to recite means plus functions; wherein Katoh image processing unit (100) is read as means for receiving image data for the image and means for defining a first sub-frame of the image having a plurality of image elements, and at least a second sub-frame of the image having a corresponding plurality of image elements, with each image element of the second sub-frame spatially offset an offset distance from a corresponding image element of the first sub-frame; and Katoh display device (104 and 110) as means for displaying the first sub-frame in a first position and the second sub-frame in a second position, with each displayed image element of the second sub-frame spatially offset substantially the offset distance from the corresponding displayed image element of the first sub-frame, and are therefore rejected on the same reasons set forth in claims 13 and 18 discussed above.

Regarding claim 26, Katoh further teaches the image processing unit 100 (the computer processor 100) having a system controller (132) for executing a program of commands or software, which inherently stores in a system memory for performing the method steps of claims 1, 6 and 7. Claim 26 is therefore rejected.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 5, 16 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katoh in view of Ferguson (U.S. Patent No. 6,816,141).

Katoh teaches generally all as discussed above, including a image shifter (106), see Figure 37, except the means or steps for displaying the second sub-frame including overlapping image elements of the second sub-frame with image elements of the first sub-frame, or further including defining a third sub-frame of the image and a fourth sub-frame of the image, the fourth sub-frame being spatially offset from the third sub-frame and the third sub-frame and the fourth sub-frame both being spatially offset from the first sub-frame and the second sub-frame; and displaying the third sub-frame in a third position spatially offset from the first position and the second position, and displaying the fourth sub-frame in a fourth position spatially offset from the first position, the second position, and the third position.

Ferguson teaches: a first sub-frame, a second sub-frame, a third sub-frame and a fourth sub-frame, see Figure 16A-C, and the image shifter or switch (11), see Figures 1 or 2, as means

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for performing steps of displaying the second sub-frame including overlapping image elements of the second sub-frame with image elements of the first sub-frame, or further including defining a third sub-frame of the image and a fourth sub-frame of the image, the fourth sub-frame being spatially offset from the third sub-frame and the third sub-frame and the fourth sub-frame both being spatially offset from the first sub-frame and the second sub-frame; and displaying the third sub-frame in a third position spatially offset from the first position and the second position, and displaying the fourth sub-frame in a fourth position spatially offset from the first position, the second position, and the third position, see Figures 38-40, column 41, line 24 to column 42, line 14. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the switch as taught by Ferguson in the Katoh device because this would provide an improved projection type image display device, realizing a desired bright, high resolution and uniform display, see Ferguson, column 41, lines 21-23. Claims 2, 5, 16 and 24 are dependent upon the base claims 1, 13 and 23, and are therefore rejected on the same reasons set forth in base claims 1, 13 and 23, and by the rationale discussed above.

Conclusion

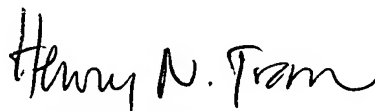
8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. They are U.S. Patents Nos.: 6,657,603; 5,689,283; and 5,729,245, which teach systems and methods of displaying images using spatial light modulation techniques for improving display resolution.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Henry N. Tran whose telephone number is 571-272-7760. The examiner can normally be reached on M-F 8:00-4:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin H. Shalwala can be reached on 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Henry N Tran
Primary Examiner
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HT
1/5/07